REMARKS

Claims 1-6, 14-15 and 21-27 are pending. Claims 7-13 and 16-20 were withdrawn. Claim 1 has been amended, claims 2-3, and 15 are original, and claims 4-6, 14, and 21-27 were previously presented.

Rejections Under 35 U.S.C. § 112

Claims 1-6, 14-15, 21-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The newly claimed limitation of "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Younq's modulus of the polymeric material", while disclosed in the specification is not enables as it is not related to either any specific polymer, or any method of introduction of voids into polymeric material or any other materials/conditions that lead to production of material which has decreased bulk modulus while retaining the Young's modulus substantially unchanged.

The Examiner alleged that the specification provides no direction or working examples. No specific materials or methods of introducing voids are disclosed. The Examiner noted that all of the void containing materials described throughout the specification refer to the same drawing, i.e., all of the voids and all the polymeric materials disclosed in the specification refer back to drawing references (208) and (204) respectively. The Examiner admitted that it appears that different ways of making such

materials are disclosed throughout the specification. The Examiner also noted that the specification discloses introduction of voids via gas bubbles (blowing agents), microspheres, diffusers, air entrainers, etc., that each of these methods varies significantly from another, and that, clearly, produces porous materials of different structures and characteristics. The Examiner then alleged that there is no correlation between the claimed properties and anything else (methods, materials, steps, etc.) in the specification.

On page 6 of the specification it is stated that the "polymeric material 204 comprises a solid material 206 and a plurality of voids 208". Pages 6 and 7 discuss the bulk modulus and Young's modulus.

Pages 7-10 describe 11 different procedures for providing voids in the solid material of the polymeric material. For example, on page 8 it states, "For example, polymeric material 204 comprises an elastomeric foam. The polymeric material 204 is sprayed through an aerator component to introduce the voids 208 into the solid material 206. The aerator component comprises an aerosol sprayer or an airbrush. The aerator component introduces the gas bubbles into the solid material 206."

In another example on page 8 it states, "An air-entrainer in one example introduces and stabilizes the voids 208 into the solid material 206. The air-entrainer mixes a plurality of gas bubbles into the solid material 206. The air-entrainer is selected from a plurality of air-entrainers based on a chemical formula of the polymeric material 204. In one example, the air-entrainer comprises a surfactant with a hydrophobic end and a hydrophilic end. The hydrophilic end is attracted to a base material and the hydrophobic end acts to isolate and stabilize the air bubbles caused by mixing. In

another example, the air-entrainer comprises a first end that is attracted to the polymeric material 204 and a second end that is repulsed by the polymeric material 204. Where the polymeric material 204 comprises a silicone, the air-entrainer in one example comprises a self-assembling monolayer material. The self-assembling monolayer material in one example comprises octadecyltrichlorosilane. Octadecyltrichlorosilane comprises one end that is attracted to silicon and one end that is repulsed by silicon. Thus, octadecyltrichlorosilane promotes a stabilization of the gas bubbles in the solid material 206."

Furthermore, on pages 11 and 12 four different examples are given for using the polymeric material with the sensor fiber.

Therefore, there is sufficient teaching in the specification for one skilled in the art to implement the claimed invention. Applicant traverses the rejection of the claims under 35 U.S.C. 112, and the Examiner is respectfully requested to reconsider the rejection.

Rejections Under 35 U.S.C. § 102(b) and 103(a)

The Examiner rejected claims 1-3 and 14-15,24, and 27 under 35 U.S.C. 102(b) as being anticipated by EO 752603 to W.L. Gore and Associates (hereinafter "W.L Gore").

The Examiner also rejected claims 1-4, 15 and 21-27 under 35 U.S.C. 103(a) as being unpatentable over EP 660082 to Andrew A G.

The Examiner also rejected claims 5 and 6 under 35 U.S.C. 103(a) as being unpatentable over Andrew AG. in combination with US 5,706,175 to Takei.

The Examiner also rejected claims 1-3 and 15,24, and 27 under 35 U.S.C. 103(a)

as being unpatentable over W099/36820 to SUN Microsystems Inc., (hereinafter "SUN") in combination with US Patent 4,107,354 to Wilkenloh et al., (hereinafter Wilkenloh") or W.L. Gore.

The Examiner responded to Applicant's previous argument that none of the primary references, i.e., WL Gore (EO 752603), or Sun Microsystems (W099/36829) or Andrews (EP 660082) disclose the limitation of "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Young's modulus of the polymeric material". The Examiner agreed that none of the cited references expressly disclose this limitation. However, the Examiner alleged that there is a lack of expressed disclosure of this limitation in the specification. The Examiner then concluded that at least one or all of the methods disclosed in the primary references (which methods correspond to the method of void introduction disclosed in the instant specification) inherently result in the materials in which of "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Young's modulus of the polymeric material".

However the specification provides eleven different examples of forming voids and four different examples of using the polymeric material with the sensor fiber. Some of these examples specifically refer to Young's modulus. In particular, the specification provides equations that relate the bulk modulus to Young's modulus of a polymeric material. Thus there is adequate disclosure in the specification to support the previous amended claims that contain the phrase "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material

without substantially altering a Young's modulus of the polymeric material".

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. It is believed that the Examiner has not provided sufficient reasons for his holding.

As previously stated, EO 752603 discloses a light transmitting fiber core and a buffer composed of a closed cell porous polymer mater that surrounds the light transmitting fiber core. EO 752603 teaches that the buffering protects the optical fiber from severe stresses, as stated on page 2, lines 30-32. However, contrary to applicant's claim 1, EO 752603 does not disclose "the introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Young's modulus of the polymeric material", as recited in applicant's claim 1. This is because EP 752603 teaches that the improved buffer comprises a closed cell porous polymeric material, having a minimum porosity per unit volume of material of 10%, as stated on page 3, lines 13-14. Alternatively, EP 752603 discloses that the buffering may be comprised at least in part by a 50% porous

co-extruded polypropylene film, as stated on page 3, lines 18-21. Thus, EP 752603 is missing the elements "the introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Young's modulus of the polymeric material", as recited in applicant's claim 1.

In view of the foregoing, applicant submits that EO 752603 does not describe each and every element of claim 1, and therefore EO 752603 does not anticipate claim 1. Since claims 2-4, 14-15 and 21-27 respectively depend from allowable claim 1, these claims are also allowable over EO 752603.

Also as previously stated, WO99/36829 teaches a buffer layer of plastic form that surrounds a fiber optic cable core and provides mechanical thermal insulation. This reference does not disclose or suggest the claim 1 limitation of "the introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Young's modulus of the polymeric material".

EP 660082 discloses a sensing coil of a fiber optic gyroscope that is submerged in a gel. The fiber has a polymeric buffer coating on it, as stated in column 6, lines 28-31. This reference also does not disclose or suggest the claim 1 limitation of "the introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Young's modulus of the polymeric material".

Wilkenloh discloses a coaxial cable having greatly improved mechanical and electrical properties derived from a foamed dielectric having a dielectric constant in the

range of 1.32 to 1.1, such cable being provided by a novel method of coating a center conductor of the cable with a dielectric with an extruded cellular polyolefin base composition which has been rendered cellular by the direct injection of a blowing agent in a liquid form into the polymer during an extrusion process. Also disclosed are an apparatus and a method of continuous wire electropolishing and pre-coating. This reference also does not disclose or suggest the claim 1 limitation of "the introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Young's modulus of the polymeric material".

Takei discloses a resin-sealed semiconductor device that includes a plurality of electronic components mounted on a printed wiring board, a circuit mounting surface of the board being resin-sealed, with connection terminals of the electronic components electrically connected to a printed wiring on the board. A surface portion of the board is coated with insulator material, which contains tiny hollow spheres and constitutes a thermal expansion resin. This reference also does not disclose or suggest the claim 1 limitation of "the introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Young's modulus of the polymeric material".

The dependent claims 2-6, 14, 15 and 21-27 include all the limitations of the respective independent claims upon which they depend and therefore are allowable over the cited prior art for the reasons set forth with regard to independent claims.

In order to more clearly define the present invention, claim 1 has been amended to include the following, "wherein movement of a portion of the polymeric material is

accommodated through compression of at least one of the voids, wherein the polymeric material with the voids has a lower Poisson's ratio than the polymeric material without voids, and wherein, since the voids do not substantially alter the Young's modulus of the solid material, a decrease in the Poisson's ratio results in a decrease in the bulk modulus of the polymeric material." This is supported in the specification on pages 6 and 7.

The Examiner is therefore respectfully requested to reconsider the rejection of the claims under 35 U.S.C. § 102(b) and 103(a).

In view of the above amendments and remarks, allowance of all claims pending is respectfully requested. If a telephone conference would be of assistance in advancing the prosecution of this application, the Examiner is invited to call applicant's attorney.

Respectfully submitted,

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